watershed focus
New Jersey Department of Environmental Protection
Winter 2004

what's in focus

DEP LAUNCHES NEW ERA IN WATER PROTECTION

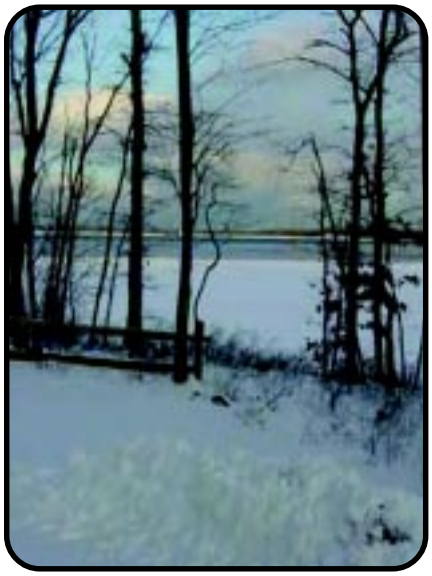
Stormwater rules adopted provide 300-foot buffers for more than 6,000 miles of waterways

As part of his commitment to protect New Jersey's drinking water and to stop sprawl, Governor James E. McGreevey announced in January the formal adoption of two sets of stormwater rules that protect water quality and preserve the integrity of drinking water supplies statewide.

The rules will minimize the impact of hundreds of new development projects, by requiring recharge of rainwater into the ground and controlling development within 300-foot buffers around more than 6,000 miles of high-quality waterways.

"These stormwater rules are the most comprehensive set of water protections in the nation; no other state has required statewide 300-foot buffers around its high-quality waters. They will prove to be a critical tool in our fight against sprawl," said Governor McGreevey.

(***STORMWATER RULES*** *continued on page 2)*



The recently adopted stormwater rules will protect drinking water sources such as the Manasquan Reservoir.

watershed *focus*

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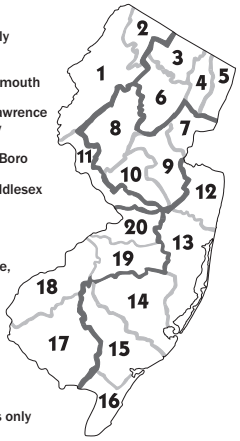
New Jersey's 2 Watershed Planning Bureaus & 20 Watershed Management Areas

Northern Planning Bureau
(609) 633-3812
1. Upper Delaware River
2. Walkill, Pochuck, Papakating
3. Pompton, Pequannock, Wanaque, Ramapo
4. Lower Passaic, Saddle
5. Hackensack, Hudson, Pascack
6. Upper & Middle Passaic, Whippany, Rockaway
7. Arthur Kill - Hudson County only
8. North & South Branch Raritan
9. Lower Raritan, South River, Lawrence Brook - excluding Monmouth County
10. Millstone River - excluding Lawrence Township and Monmouth County
11. Central Delaware Tributaries - Hunterdon County, Pennington Boro and Hopewell Township only
12. Monmouth Watersheds - Middlesex County only

Southern Planning Bureau
(609) 984-6888
7. Elizabeth, Rahway, Woodbridge, Arthur Kill - excluding Hudson County
9. Lower Raritan - Monmouth County only
11. Central Delaware Tributaries - Mercer County only, excluding Pennington Boro and Hopewell Township
12. Monmouth Watersheds - Monmouth and Ocean Counties only
13. Barnegat Bay Watersheds
14. Mullica, Wading River
15. Great Egg Harbor, Tuckahoe
16. Cape May Watersheds
17. Maurice, Salem, Cohansey
18. Lower Delaware Tributaries
19. Rancocas Creek
20. Crosswicks Creek



STORMWATER RULES

(continued from page 1)

National and state environmental leaders have hailed New Jersey's new stormwater rules as among the most comprehensive and most protective of any state's rules. While at least six other states provide for protective buffers and groundwater recharge in certain areas, no other state calls for 300-foot buffers around all of its Category One (C1) waterbodies and no net loss of recharge to underground aquifers.

Two Rules Involving Stormwater

The first set of rules updates the state's Stormwater Management Rules for the first time since their original adoption in 1983. The rules provide the basis for municipalities to develop stormwater management plans and will also affect requirements of several state-issued permits such as freshwater wetlands and stream encroachment permits.

The second set of new stormwater rules requires municipalities, large public complexes such as hospitals and highway systems to develop stormwater management programs through the New Jersey Pollutant Discharge Elimination System (NJPDES) permit program. The new NJPDES permits address requirements of the federally mandated Environmental Protection Agency (EPA) Phase II stormwater rules published in December 1999.

Category One Water and 300-Foot Buffers

One of the most significant provisions of the new rules is the requirement of 300-foot buffers minimizing new development to protect C1 waterbodies. C1 waters are designated due to their clarity, color, scenic setting, other characteristics of aesthetic value, exceptional ecological significance, exceptional recreational significance, exceptional water supply significance or exceptional fisheries resources. The buffers will significantly protect these critical drinking water and sensitive ecological resources from degradation by new nonpoint sources of pollution.

Governor James E. McGreevey (left) announces the adoption of the stormwater rules with DEP Commissioner Bradley M. Campbell.

How Does Development Affect Stormwater?

Development can have a great impact on local waterways and ground water. Development creates impervious surfaces such as roads, rooftops, and parking lots that do not allow stormwater to soak into the ground, increasing the rate of stormwater runoff. This means a greater volume of water reaches the waterway faster and less of that water is able to infiltrate ground water. This leads to increased flooding during and immediately after storms but reduced flow during dry periods. The reduced amount of infiltrating water can lower ground water levels and the contribution of groundwater to stream flow, which can stress downstream environments that depend on steadier flows.

In the stream, more erosion of stream banks and scouring channels will occur, degrading habitat for plant and animal life that depend on clear water. Sediment in water clogs the gills of fish and blocks sunlight essential for plants. The sediment settles to fill in stream channels, lakes and reservoirs.

Increased runoff also contains contaminants. Stormwater runoff carries litter, cigarette butts and other debris from sidewalks, fecal coliform from pet waste and failing septic systems, motor oil from leaking cars or poured into storm sewers, settled air pollutants from car exhaust as well as pesticides and fertilizers from lawn care. These contaminants reach local waterways quickly after a storm.

The new stormwater rules emphasize low impact development that retains more water on site reducing the impact of increase impervious surfaces. During the design phase of new development, best management practices such as reducing site disturbance, minimizing impervious cover and maintaining natural ground cover are emphasized.

The rules provide some flexibility on the size of the buffers in areas where stormwater management plans have been approved and for minor disturbances around existing development within the 300-foot buffer. The rules also apply the buffer to tributaries of C1 waterbodies within the immediate watershed boundary that are not themselves designated C1 waterbodies.

In total, the buffers will protect 6,093 stream miles of the over 18,000 miles of streams in the State (as identified on 1:24,000 scale mapping) - including over 3,307 miles of currently designated C1 rivers and streams and an additional 2,786 miles of non-C1 tributaries to C1 streams.

Since taking office, Governor McGreevey has made C1 protection of important drinking water resources one of his top environmental priorities. Last Earth Day, he designated nine reservoirs totaling more than 7,000 acres and serving over 3.5 million residents as C1 waterbodies. He has also proposed an additional 500 miles of ecologically sensitive streams and rivers for C1 designation.

Stormwater Management Rules Emphasize Recharge and Water Quality Controls in New Developments

The Stormwater Management Rules also stress performance standards for ground water recharge to increase the integrity of the state's aquifers and protect dry weather base flow in streams. They establish a goal of maintaining 100 percent of the average annual ground water recharge for new development projects, a major initiative toward mitigating future droughts and flooding. However, these requirements are waived in urban areas.

In addition to recharge standards, the rules promote smart growth techniques by requiring consideration of low impact designs for stormwater management that include maintaining natural vegetation and reducing unnecessary loss of trees. Low impact development design also includes minimizing existing drainage surfaces, preventing large contiguous areas of impervious surfaces and maintaining existing drainage characteristics and patterns. Consideration of these techniques will require that stormwater management is considered early in the project design and not as a secondary concern. Once nonstructural measures have been fully integrated into the site design any remaining water quality concerns must be addressed through the use of best management practices to reduce runoff of total suspended solids (TSS) by 80 percent and other pollutants up to the maximum extent feasible.

"Some studies estimate that more than half of existing surface water pollution in the state is attributable to nonpoint source pollution and stormwater runoff," said New Jersey Department of Environmental Protection Commissioner Bradley M. Campbell. "Through these innovative stormwater programs, we can better manage ordinary things - such as lawn products, pet waste, and the trash from our garbage cans - and help create a cleaner, safer water future for New Jersey."

Stormwater Permitting Program Focuses on Existing Development

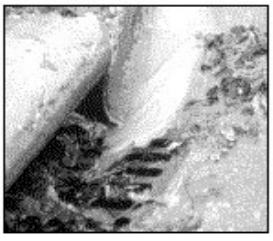
The DEP will issue the new NJDPES permits required by the second set of stormwater rules for all municipalities; large public complexes such as colleges, prisons, and hospitals; and highway systems operated by counties and other government agencies, such as the NJ Department of Transportation and the South Jersey Transportation Authority. All permittees will be required to develop and to adopt stormwater management programs for new development.

In addition, permittees will have to develop public education programs and waste disposal controls for existing developed areas. These regulations affecting existing development address a significant oversight in current regulations that only focus on new development.

One of the most important focuses of this set of stormwater rules is its emphasis on public education. Few people realize the impact of everyday activities on their sources of drinking water. By promoting public awareness campaigns, these rules will help citizens recognize that every person plays a critical role in keeping our drinking water safe and clean. The programs will emphasize common-sense steps toward reducing nonpoint source pollution, such as discouraging unnecessary applications of pesticide, requiring proper disposal of yard and pet waste, retrofitting storm sewer grates and improving municipal maintenance yard management.

The state developed both sets of stormwater control measures with significant input from regulated communities, including the New Jersey League of Municipalities, the New Jersey County Planners Association, and the Association of New Jersey Environmental Commissions. Developers, mayors, and environmental groups were also heavily consulted in the rulemaking process.

Both sets of rules were originally proposed on January 6, 2003 and were subject to an extensive public comment period. The adopted rules will appear in the February 2, 2004 *New Jersey Register*. The rule adoptions are available on the DEP Website at www.nj.gov/dep/rules. More information on the rules is also available at www.njstormwater.org.



What Can You Do To Protect NJ's Water Resources?

Never dump litter, motor oil, grass trimmings, leaves, animal waste or other pollutants on to roadways or into storm drains or catch basins.

Limit your use of fertilizers and pesticides. Excess fertilizer and improperly applied pesticides can pollute local waterways and groundwater.

Do not feed local waterfowl. Large concentrated populations of geese, ducks and other waterfowl can degrade local waterbodies.

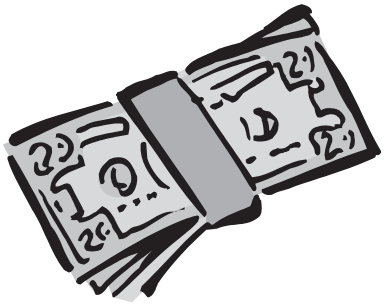
Landscape your yard to minimize rainwater runoff. Divert rain from paved surfaces onto grass or other vegetation to permit gradual infiltration. Consider installing a rain garden.

Preserve the established trees and natural areas in your neighborhood, which help minimize damage from stormwater runoff.

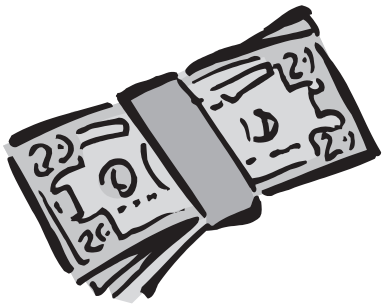
Consider using native and/or drought-tolerant species. Consult your local nursery or Rutgers Cooperative Extension for advice on which plants, shrubs and trees will grow well in your yard.

DEP AWARDS $2.5 MILLION IN GRANTS FOR NONPOINT SOURCE POLLUTION CONTROL PROJECTS

by Helen Rancan and Jessica Milose, Division of Watershed Management

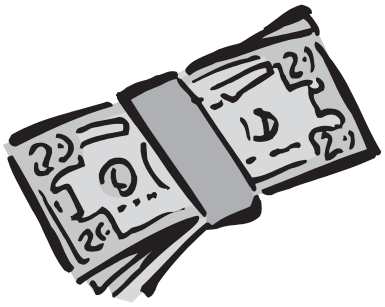


New Jersey Department of Environmental Protection Commissioner Bradley M. Campbell announced in June 2003 the award of $2.5 million in pass-through grants to fund 14 nonpoint source pollution control projects throughout New Jersey. The grants are being awarded with state fiscal year (SFY) 2003 funds from the Division of Watershed Management's Section 319(h) grant program.



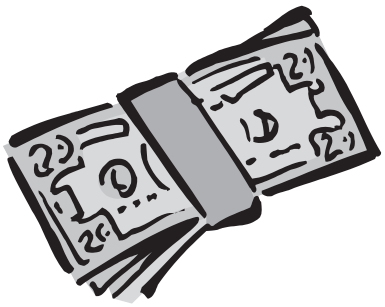
"The projects that were selected address the priority impairments and water quality objectives identified in the Department's *Guidelines for 319(h) Projects for FY2003*," said Lawrence J. Baier, Director of the Division of Watershed Management. These priorities include: retrofitting urban areas with improved stormwater infrastructure, developing Regional Stormwater Management Plans implementing Total Maximum Daily Loads (TMDLs) to restore waters of the state that are impaired by nonpoint source pollution and preventing future impairment at biological monitoring stations and in designated Category One waterways.

SFY2004 Grants Under Review



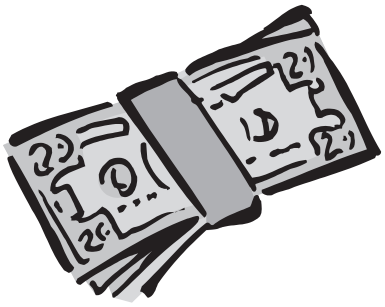
The current funding cycle of the 319(h) program for state fiscal year SFY 2004 is almost complete. The guidance document entitled, "Request for Proposals: SFY 2004 Section 319(h) NPS Grants for Nonpoint Source Pollution Control" required all proposals for SFY 2004 319(h) grant funding be submitted to the DEP's Nonpoint Source (NPS) Program by August 15, 2003. The proposals submitted by this deadline and determined to be administratively complete were reviewed by the Division of Watershed Management and the DEP's Technical Review Committee for applicability for 319(h) funding and technical feasibility. Each proposal was assessed for its compliance with EPA guidelines for administering the 319(h) NPS program and the project's ability to mitigate nonpoint source pollution. Final funding decisions for SFY 2004 will be made by the DEP no later then March 15, 2004.

SFY2005 Announcement



The next cycle of 319(h) funding is right around the corner. The SFY 2005 Request for Proposals is expected to be announced in early 2004 and will be posted on the Division's website. Please check www.nj.gov/dep/watershedmgt periodically during this time for immediate access to the document. Also, be sure to read the SFY 2005 Request for Proposals for more information on changes for the next cycle.

NPS Program Reorganized



The NPS Program has been moved to the Bureau of Evaluation and Management within the Division of Watershed Management. Helen Rancan has assumed the role of the Statewide Nonpoint Source Coordinator. Ms. Rancan also represents the DEP, on behalf of Commissioner Campbell, on the State Soil Conservation Committee. Jessica Milose is the 319(h) Program Coordinator. The NPS Program consists of the Statewide NPS Strategy and annual report to USEPA, the 319(h) grant program, the 6217 Coastal NPS Best Management Practice (BMP) Implementation Program, and coordination with TMDLs, stormwater management, stormwater permitting, water quality management planning, land use permitting and other state and local programs to control water pollution attributed to nonpoint sources. For more information about the NPS Program, please call (609) 633-1179 or visit www.njnonpointsource.org

SFY2003 Grant Awards
Projects that received grant awards from SFY2003 319(h) funds are:

❶ **WMA 1 - Swartswood Lakes and Watershed Association, "Swartswood Lakes and Watershed Diagnostic Assessment" - $65,000**
This project will update the existing lake management plan for Swartswood Lake by conducting a diagnostic study of nutrient loading and its effects on zooplankton, phytoplankton, and fish. This study will fill in the gaps for the development of a regional stormwater management plan for the Swartswood Lake Watershed.

❷ **WMA 2 - Wallkill River National Wildlife Refuge, "Streambank Restoration along the Wallkill River at Route 565 within the Wallkill River National Wildlife Refuge" - $167,400**
This project will address the phosphorus exceedance and biological impairment detected at the United States Geological Survey's and the DEP's downstream monitoring sites. The project will restore the streambanks through vegetative plantings and biostabilization in an area within the refuge that is heavily used for canoeing and fishing access.

❸ **WMA 2 - Township of Sparta, "Lake Mohawk Stormwater Basin Alum Injection System" - $98,200**
This project will install an alum injection system in Lake Mohawk to coagulate phosphorus and provide further controls to reduce levels of phosphorus and the associated algae in the lake.

❹ **WMA 3 - Pequannock River Coalition, "Pequannock River Thermal Mitigation, Monitoring and Assessment" - $23,105**
The Pequannock River is currently listed as impaired for exceedance of temperature criteria for trout production waters. This project will conduct monitoring and assessment of temperature and flow and its impact on trout populations in the Pequannock River. The project will also establish a riparian tree canopy and provide temperature monitoring on the Kanouse Brook in an attempt to restore these waters and attain the designated trout production use.

❺ **WMA 6 - Rutgers Cooperative Extension, Department of Environmental Science, "Regional Stormwater Management Plan for Troy Brook" - $213,400**
This project will produce a Regional Stormwater Management Plan for Troy Brook in the Whippany River Watershed that will help implement the load reductions required under the fecal coliform TMDL established for the Whippany River. In addition, the plan will address reduced stream baseflow, groundwater recharge, and other sources of nonpoint source pollution through identification and implementation of watershed-specific stormwater management measures.

❻ **WMA 6 - Rutgers Cooperative Extension, Department of Environmental Science, "Bee Meadow Pond Shoreline Restoration Project" - $126,940**
The Bee Meadow Pond project will revegetate and stabilize approximately 1,100 linear feet of degraded shoreline and will also help implement the Whippany River TMDL for fecal coliform by reducing waterfowl droppings that contribute to high concentrations of fecal coliform in Bee Meadow Pond, which drains to the Whippany River.

❼ **WMA 7 - Rutgers Cooperative Extension, Department of Environmental Science, "Regional Stormwater Management Plan for Robinson's Branch" - $291,124**
This project will produce a Regional Stormwater Management Plan for Robinson's Branch in the Rahway River Watershed and will help implement the Rahway River fecal coliform TMDL. In addition, the plan will address reduced stream baseflow, groundwater recharge, and other sources of nonpoint source pollution through identification and implementation of watershed specific stormwater management.

SFY2003 Grant Awards
Projects that received grant awards from SFY2003 319(h) funds are:

8. **WMA 9 - Township of Franklin and New Jersey Water Supply Authority, "Stormwater Management Plan for the Cedar Grove (Al's) Brook Watershed" - $150,000**
   This project, a cooperative effort between the township and the New Jersey Water Supply Authority, will reduce the impacts of nonpoint source pollution on a major regional water supply resource. Some of the major accomplishments will include ensuring long term stability of the waterway, mitigating current pollutant loading, and preventing future degradation of waterways in the watershed.

9. **WMA 11 - City of Trenton, "Urban Stormwater Retrofit in the City of Trenton" - $75,000**
   This project will create an urban stormwater retrofit for the areas between Prospect Street and Calhoun Street to address drainage, flooding, and polluted runoff problems. The city's current stormwater collection system carries stormwater runoff directly into the D&R Canal, a drinking water source for central New Jersey. The project that will achieve the city's environmental and urban renewal needs.

10. **WMA 12 - Monmouth University School of Science, Technology and Engineering, "Innovative Assessment of Sources of Fecal E. Coli in Pathogen Impaired Waterbodies of the Monmouth Coastal Watersheds Region" - $124,762**
    This project will use innovative assessment techniques such as bacterial source tracking to identify sources of fecal coliform in the Deal Lake, Shark River, and Wreck Pond watersheds.

11. **WMA 12 - Township of Neptune, "The Implementation of Stormwater BMPs at Lake Alberta" - $195,400**
    This project will implement stormwater best management practices at Lake Alberta by utilizing a stormwater interceptor, subsurface aerator, line skimmer, and waterfowl deterrent measures to decrease pollution levels in the lake.

12. **WMA 12 - Monmouth County Planning Board, "Ramanessin Brook NPS Pollution Source Assessment and Stormwater Impact Study" - $177,500**
    This project will complete Phase One of a Regional Stormwater Management Plan for the Ramanessin Brook. The Ramanessin Brook is currently identified as impaired for phosphorus and fecal coliform by the Monmouth County Health Department and the DEP has proposed a TMDL for the waterbody, which mandates a 91 percent reduction for fecal coliform. This project will help implement the fecal coliform TMDL, conduct phosphorus source trackdown and use hydraulic and water quality modeling and monitoring to complete a comprehensive subwatershed characterization and assessment as a basis for RSWMP development.

13. **WMA 12 - Borough of Avon by the Sea, "Removing Siltation and Debris in Sylvan Lake" - $230,000**
    This project will complement the past efforts of the DEP and the Sylvan Lake Commission to reduce nonpoint source pollution in the lake which included installing a containment device at the inlet of the lake, implementing a demonstration goose manure management project, and utilizing aeration techniques and weed and algae treatments. This project will focus on removing silt and debris from the western portion of Sylvan Lake.

14. **WMA 18 - Camden and Gloucester County Soil Conservation Districts, "Development of a Regional Stormwater Management Plan for the Raccoon Creek" - $637,174**
    This project will develop a Regional Stormwater Management Plan for the upper reaches of Raccoon Creek, which is under intense development pressure. The plan will assess the existing stormwater conditions, locate impaired areas, and describe the flow regime throughout the watershed to identify and implement region- specific management measures for stormwater and nonpoint source pollution.

New Jersey Watershed Ambassadors Ready To Serve Their Watershed Communities

by Christine Hirt, Division of Watershed Management

Are you interested in learning about volunteer monitoring techniques? Are you looking for an exciting environmental presentation for your classroom or community group? Do want to know more about your watershed? The New Jersey Watershed Ambassador Program can help you.

The New Jersey Watershed Ambassadors program is a community-oriented AmeriCorps program hosted by the DEP's Division of Watershed Management since September 2000. Through this program, AmeriCorps members undergo two weeks of intensive training in volunteer monitoring techniques, watershed issues and presentation skills. Then the members are placed in watershed management areas across the state, ready to serve their watershed communities.

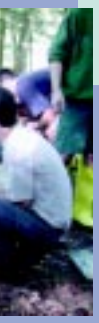
Watershed Ambassadors monitor the rivers of New Jersey through Visual Assessment and Biological Assessment protocols. The members also train community volunteers in these two volunteer monitoring techniques. Members are available to make presentations to community organizations and schools, which provide information about water and watershed issues in New Jersey.

Created in 1993, AmeriCorps is a network of national service programs that engage more than 50,000 Americans each year in intensive service to meet critical needs in education, public safety, health, and the environment. AmeriCorps members serve through more than 2,100 nonprofits, public agencies, and faith-based organizations. They tutor and mentor youth, build affordable housing, teach computer skills, clean parks and streams, run after-school programs, and help communities respond to disasters.

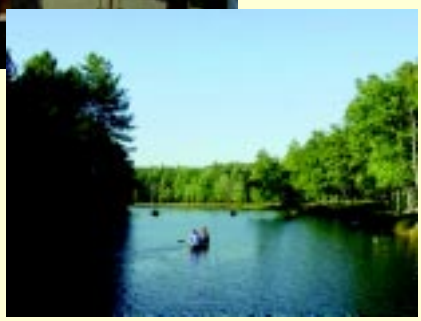
To schedule a presentation, please contact the New Jersey Watershed Ambassador for your area. For more information about the program, contact Christine Hirt, Program Manager at 609-292-2113 or christine.hirt@dep.state.nj.us

New Jersey

Watershed Ambassadors Program



2003 - 2004



WMA 1 - Upper Delaware
David Schaaf - (908) 735-0733

WMA 2 - Wallkill
Dana Emerson - (973) 579-6998

WMA 3 - Pompton, Pequannock, Wanaque & Ramapo
Eric Hazelcorn - (973) 616-1006

WMA 4 - Lower Passaic & Saddle River
Laura Hilton - (973) 817-5784

WMA 5 - Hackensack, Hudson & Pascack
Nicholas Vos-Wein - (201) 968-0808

WMA 6 - Upper & Mid Passaic, Whippany & Rockaway
Joana Alonzo - (973) 635-6629

WMA 7 - Arthur Kill
Peter Chaibongsai - (908) 527-4032

WMA 8 - North & South Branch Raritan
Mitchell Klasky - (908) 234-1852

WMA 9 - Lower Raritan, South River & Lawrence
Shannon Buckley - (732) 356-9344

WMA 10 - Millstone
Adam Hale - (609) 737-3735

WMA 11 - Central Delaware Tributaries
Jeff Gray - (609) 883-9500

WMA 12 - Monmouth
Kevin Dunn - (732) 683-2287

WMA 13 - Barnegat Bay
Lisa Kwiatkowski - (609) 971-7002

WMA 14 - Mullica
Tracie Farina - (609) 652-1665

WMA 15 - Great Egg Harbor
Andrew Anderson - (609) 272-6997

WMA 16 - Cape May
Paul Simmons - (609) 465-1082

WMA 17 - Maurice, Salem, Cohansey
Jessica Doxsey - (856) 825-3700

WMA 18 - Lower Delaware
Michael Gross - (856) 614-3611

WMA 19 - Rancocas Creek
Josh Melissari - (856) 983-5665

WMA 20 - Assiscunk, Crosswicks & Doctors
Kari Brookhouse - (609) 586-9603

DEP Establishes 203 TMDLs to Safeguard New Jersey's Waterways

by Barbara Hirst and Kimberly Cenno, Division of Watershed Management

The New Jersey Department of Environmental Protection (DEP) has moved forward with its aggressive plan to reduce pollution in streams and rivers with impaired water quality by establishing 203 Total Maximum Daily Loads (TMDLs) for fecal coliform in streams and phosphorus in eutrophic lakes. The federal Environmental Protection Agency (EPA) has already approved these TMDLs and the DEP is adopting them into the applicable Water Quality Management Plans. The fecal TMDLs cover the amount of fecal coliform entering more than 1400 miles of waterways in the state throughout New Jersey's 20 watershed management areas. The phosphorus TMDLs serve as the foundation on which restoration plans will be developed to restore 4,000 acres of eutrophic lakes.

"Controlling the amount of pollutants like fecal coliform that enter New Jersey's rivers and streams advances our larger efforts to protect and improve the quality of water resources throughout the state," said DEP Commissioner Bradley M. Campbell. "Our next step is to track down and identify the sources of the fecal impairment so that we can effectively control, reduce or eliminate the contamination."

For example, the thirty-four approved TMDLs in the Northeast Water Region (WMAs 3, 4, 5 and 6) address 305 river miles or approximately 87 percent of the total river miles impaired by fecal coliform (there are approximately 352 miles of fecal coliform impaired river miles) in this watershed region. To achieve water quality standards in the impaired waterbodies, reductions in fecal coliform load range from 37 to 98 percent. Fecal coliform impairment will be addressed through monitoring programs, systematic source track down, appropriate management strategies, identification of responsible entities, and alignment department-wide resources. A similar approach for phosphorus impairment will result in lake restoration plans.

Under the 1972 federal Clean Water Act, states must develop lists of waterways that do not meet minimum federal water quality standards. In addition, states must establish TMDLs for these impaired waterbodies, which specify the maximum amount of a pollutant the impaired lake or river can receive and still meet water quality standards.

In September 2002, DEP and EPA signed a memorandum of agreement that formalized New Jersey's commitment to establish TMDLs. Previously EPA had approved only eleven TMDLs for New Jersey during an eight-year period. Under the new agreement, the DEP agreed to establish 120 fecal coliform and 35 eutrophic lake TMDLs by June 30, 2003, but DEP exceeded its commitment and established 203 TMDLs before the deadline. In addition, New Jersey participated in a tri-state effort with Delaware and Pennsylvania in coordination with EPA Regions 2 and 3 to develop four TMDLs for PCBs in the Delaware River. These TMDLs were approved by EPA Region 3 on December 15, 2003. Additional information on EPA's PCB TMDL may be found on the Delaware River Basins' web page at www.state.nj.us/drbc/drbc.htm.

What's New in 2004?

In 2004, the DEP will continue to improve water quality by developing and establishing additional TMDLs and other management approaches to address phosphorus impairments in the entire non-tidal Passaic River Basin, Cooper River, Manasquan River, Wallkill River and Papakating Creek. Temperature problems in the Pequannock River will be addressed, along with Arsenic in the Wallkill and pH in the Atlantic Coastal and Lower Delaware Water Regions. New Jersey anticipates EPA approval on another 25 TMDLs during 2004 for the above waterbodies. Each TMDL must first be proposed in the *New Jersey Register* and subject to public comment. Please contact the Bureau of Environmental Analysis and Restoration at (609) 633-1141 for additional information.

What is a TMDL?

Total Maximum Daily Loads (TMDLs) represent the assimilative or carrying capacity of the receiving water, taking into consideration point and nonpoint sources of pollution, natural background, and surface water withdrawals. A TMDL identifies all the contributors of a pollutant of concern to an impaired waterbody and sets load reductions for the pollutant, as necessary, including a margin of safety, to meet surface water quality standards. The DEP also develops an implementation plan that will achieve the load reductions identified in the TMDL. TMDLs are required, under Section 303(d) of the federal Clean Water Act, to be developed for waterbodies that cannot meet surface water quality standards after the implementation of technology-based effluent limitations. TMDLs may also be established to help maintain or improve water quality in waters that are not impaired.

A TMDL expresses the required load reduction in terms of Waste Load Allocations and Load Allocations for point and nonpoint sources, respectively, and also includes a margin of safety that accounts for the uncertainties in data, modeling and response measures.

Point source reductions are reflected in permits for the point source discharges. Since nonpoint source pollution, by definition, does not come from discrete, identifiable discharges, load allocations would consist of the identification categories of nonpoint sources that contribute to the pollutant of concern (e.g. fecal coliform, phosphorus). The load allocation would also include specific load reduction measures for the pollutant of concern. These measures would be implemented through best management practices (BMPs) including local ordinances for stormwater management and nonpoint source pollution control, headwaters protection practices, or other mechanisms for addressing the priority issues of concern.

TMDL = WLA + LA + MOS
Total Maximum Daily Load = Waste Load Allocation (from Point Sources) + Load Allocation (from Nonpoint Sources) + Margin of Safety

Eutrophication and Phosphorus

The pollutant of concern for the Eutrophic Lake TMDLs is phosphorus. Phosphorus is an essential nutrient for plants and algae, but is considered a pollutant when it stimulates excessive plant and algae growth. Overgrown vegetation and algae blooms in lakes can prevent recreational use for fishing and swimming. In severe cases, plant and algae die-off can deplete oxygen in the lake raising the potential for killing fish in the lake.

Potential sources of phosphorus include discharges from sewage treatment plants, combined sewer overflows and stormwater runoff. As stormwater flows over the land, it may pick up phosphorus. Phosphorus contributions to stormwater runoff are calculated based on land uses within the lake's watershed.

What is fecal coliform?

Disease-causing microorganisms, or pathogens, are often present in human or animal fecal matter. Diseases caused by exposure to fecal matter include dysentery, hepatitis, gastroenteritis (food poisoning), and parasitic infections. The extent of pathogens in water is difficult to detect directly and so is presumed to be indicated by levels of fecal coliform, a type of bacteria found in human and animal feces. In New Jersey, the presence of fecal coliform beyond levels deemed safe also results in closure of bathing beaches, condemning of waters for shellfish harvesting and restrictions on drinking water supplies. Fecal coliform primarily enters a waterbody from a number of diffuse sources including failing septic systems, seepage from sewage pipelines, excessive populations of geese, domestic or confined animals, agricultural practices, and wildlife. Fecal coliform from these sources can reach waterbodies directly, through overland runoff, or through sewage or stormwater conveyance facilities. The DEP is addressing the fecal coliform impairment of waterbodies through monitoring, systematic source trackdown, matching management strategies with types of sources, identifying responsible entities and aligning available DEP multi-program resources to affect TMDL implementation.

NJDEP AND WATERSHED WATCH NETWORK

Hold New Jersey's First Volunteer Monitoring Summit

*(**NJDEP AND WATERSHED WATCH NETWORK** continued from back page)*

"While the department has encouraged volunteer water quality monitoring for many years, the Watershed Watch Network is the first time the department has created a systematic way for volunteers to work with the agency, get training and submit your data so that the data users in the department can respond in an appropriate manner," said Commissioner Bradley M. Campbell. "Ultimately we want to achieve is a statewide partnership with each of you so that together, we can achieve clean water goals."

The new program seeks to provide acceptable protocols for volunteers if they chose to submit their data to the DEP and to assist volunteers in designing and building upon their existing programs. "The four tiers range from education and stewardship to community assessment and indicators. While a tiered approach is not a new concept, what is new is that New Jersey is assigning data collection protocols to the various tiers that will be linked to specific responses by the department from the various program that use volunteer data," said Lawrence J. Baier, Director of the Division of Watershed Management.

Advisory groups established

In 2003, an assessment survey was sent to any organization or individual conducting volunteer monitoring. The 40 survey sought information about types of training conducted, protocols used, parameters tested, annual costs, and volunteers involved.

Once the volunteers' needs were identified, the program hosted a meeting of volunteer monitors throughout the state. This is the Watershed Watch Network Council (see page 14 for a listing of members). The DEP has also been working with an internal advisory committee comprising federal and state water resource managers and representatives interested in water quality data. This committee is helping with quality assurance and quality control issues that have prevented the DEP from using volunteer data in the past.

For more information on the DEP's Volunteer Monitoring Program, please contact Danielle Donkersloot, Volunteer Monitoring Coordinator at 609-292-2113 or danielle.donkersloot@dep.state.nj.us

The Four-Tiered Approach to Volunteer Monitoring

Purpose	Data Users	Data Use	Quality Needed
A. Environmental Education	Participants Students Watershed Residents	Promote stewardship Raise their level of understanding of watershed ecology	Low level of rigor, but use sound science Wide variety of study designs are acceptable Quality assurance optional
B. Stewardship	Participants Watershed Residents Local Decision Makers	Gain understanding of existing conditions and changes over time Screen for and identify problems and positive attributes	Low to medium level of rigor Variety of study designs are acceptable Internal quality assurance desirable
C. Community or Watershed Assessment	Local Decision Makers Watershed Associations Environmental Organizations Possibly DEP	Assess current conditions Track trends Source track down of nonpoint source pollution	Medium level of rigor Data needs to reliably detect changes over time and space Study design is focused on pollution sources Internal and external quality assurance required
D. Indicators	State Decision Makers Local Decision Makers Watershed Associations Environmental Organizations	Assess current conditions and impairments Supplement agency data collection Research Evaluate best management practices	Medium to high level of rigor Study designs and methods need to be equivalent and recognized by agencies using the data Training required Internal and external quality assurance plan required

Watershed Watch Network Council

The Watershed Watch Network Council is a group of volunteer monitors, federal and state government agencies and volunteer monitoring coordinators from across New Jersey. The purpose of the Council is to provide input into the direction of the Watershed Watch Volunteer Monitoring Network. Currently the council is reviewing the protocols and programs being used throughout the state and assigning them appropriate tiers. The members of the Watershed Watch Network Council are:

Citizens United to Protect the Maurice River
Delaware Riverkeeper Network
Delaware River Basin Commission
Federation of Gloucester County Watershed Associations
Great Swamp Watershed Association
Hackensack Riverkeeper
Interstate Environmental Commission
Meadowlands Environmental Research Institute
NJ Project WET (Water Education for Teachers)
NJ Water Resources Research Institute
Pequannock River Coalition
Pompeston Creek Watershed Association
Richard Stockton College of NJ
South Branch Watershed Association
Stony Brook Millstone Watershed Association
U.S. Environmental Protection Agency
Upper Raritan Watershed Association

DEP HONORS WATERSHED LEADERS AND INNOVATORS

Excellence Awards Recognize Significant Environmental Achievements in New Jersey

In November, New Jersey Department of Environmental Protection (DEP) Commissioner Bradley M. Campbell honored watershed leaders with Environmental Excellence Awards. The awards recognize individuals, businesses, and communities who have made significant contributions to environmental protection in New Jersey.

"These awards recognize the environmental leaders in New Jersey's towns, companies, authorities, and military bases who are achieving superior environmental performance," said Commissioner Campbell. "These leaders are setting the standard for innovation and commitment, while reminding us that some of the best ideas in environmental protection emerge from local problem-solving rather than traditional regulation."

Go to page 15 for the list of Award Winners

2003 Environmental Excellence Award Winners

Winners were judged on the basis of the documented environmental benefits, innovation, and long-term impact of their work to the environment. Winners and honorable mentions in the watershed community are:

Clean and Plentiful Water Winner - Pequannock River Coalition

The Pequannock River Coalition, founded in 1994 as a grassroots watershed association, promotes the "preservation of the Pequannock River as a natural, recreational, aesthetic and water supply resource." This award recognizes the Coalition's intensive temperature monitoring program using electronic data loggers at targeted sites throughout the watershed.

Clean and Plentiful Water Honorable Mention - Passaic Valley Sewerage Commissioners

Located in Newark, Passaic Valley Sewerage Commissioners (PVSC) is a 330 million gallon per day wastewater treatment plant that serves 1.3 million people in northeastern New Jersey. In 1998, PVSC created the Passaic River/Newark Bay Restoration Program to clean the shoreline and remove debris along the banks of the Passaic River. The PVSC also created a Pollution Prevention Educational Outreach Program that visits local grammar schools to discuss point and nonpoint source pollution and household waste disposal. This honorable mention recognizes these efforts.

Clean and Plentiful Water Honorable Mention - Ten Towns Great Swamp Watershed Management Committee

The Ten Towns Great Swamp Watershed Management Committee is an inter-municipal organization that was formed to prepare and to implement a Great Swamp Watershed Management Plan. The Ten Towns Committee has become a model for effective partnership, not only among all four levels of government (municipal, county, state and federal), but also with private organizations. This honorable mention recognizes the committee's ongoing work in watershed management planning and protection.

Clean and Plentiful Water Honorable Mention - Raritan Basin Watershed Management Project

The Raritan Basin Watershed Management Project was a four-year effort funded by DEP and the New Jersey Water Supply Authority (NJWSA), and implemented by NJWSA. The project involved hundreds of stakeholders in the developing nine Characterization and Assessment Technical Reports as well as the Raritan Basin Watershed Management Plan. The Raritan Plan provides strategies for management of six critical issues highlighted by the technical reports: water supply, surface water quality, stormwater management, ground water, stream ecosystem health and riparian ecosystems integrity. This honorable mention recognizes the ongoing work to implement the Raritan Plan.

Healthy Ecosystems Winner - Hackensack Riverkeeper, Inc.

The Hackensack Riverkeeper represents the interests of the natural, living, and recreational resources of the Hackensack River through environmental advocacy, education, and conservation programs. The Hackensack Riverkeeper carries out its mission through environmental education projects focused on raising the level of awareness and sensitivity of the people of the Hackensack River watershed. The group advocates for the responsible restoration and conservation of the various habitats within the Hackensack River watershed. As citizen steward for the watershed, the Hackensack Riverkeeper proactively promotes sustainable development. This award recognizes the ongoing work of the Hackensack Riverkeeper, Inc. to protect this valuable ecosystem.

Environmental Stewardship Winner - Dr. Christopher C. Obrupta

Dr. Christopher Obrupta was an environmental consultant for 12 years prior to assuming the leadership of the New Jersey Agriculture Experiment Station Rutgers Cooperative Extension's Water Resource Program. During these years, Dr. Obrupta worked with municipalities, counties, and watershed associations to implement more than a dozen nonpoint source pollution control projects. Of these, two highly successful projects are the restoration of Strawbridge Lake in Moorestown and the urban flood plain restoration project in Rahway. These projects are classic examples of consensus and partnership building, innovative designing and implementation.

Environmental Stewardship Honorable Mention - George Hawkins

As Executive Director of the Stony Brook Millstone Watershed Association, George Hawkins oversees the association's mission to protect the natural environment in the 285 square mile drainage basin for the Stony Brook and Millstone Rivers. Operations include: a) an education program that offers more than 400 programs a year for 10,000 adults and children; b) a watershed management program including volunteer monitoring and streambank restoration; c) a 785 acre nature reserve with trails, many buildings, an arboretum and a three acre pond; d) the Watershed Organic Farm, the largest community supported organic farm in the Northeast; and e) the Natural Lands Network. Recent additions include a grant to study wetlands, an Internet-based environmental curriculum program, and the formation of the Watershed. During his tenure, the association has quadrupled in size to a staff of 28 with a budget of $1.6 million.

NJDEP AND WATERSHED WATCH NETWORK

Hold New Jersey's First Volunteer Monitoring Summit

by Danielle Donkersloot and Kerry Kirk Pflugh, Division of Watershed Management

In cooperation with the Watershed Watch Network Council, the New Jersey Department of Environmental Protection (DEP) held its first Volunteer Monitoring Summit on November 7 and 8 in Edison. Over 90 people attended the more 20 different sessions. The conference began with an overview of the Department's monitoring activities and its new four tiered approach to volunteer monitoring. Additional workshops ranged from study design issues, quality assurance program plans, data management, macroinvertebrate identification, volunteer recruitment and management and case studies of volunteer monitoring.

Four-tiered approach

Similar to Pennsylvania's program, the DEP's volunteer monitoring program has four tiers: education, stewardship, watershed assessment and indicators (see chart on page 13). This approach allows volunteers to pick their level of monitoring involvement and allows DEP data users to assess the quality of volunteer data. It is a shift in direction for the DEP, which had previously focused on volunteer monitoring as a stewardship-building experience. The new focus was to provide a mechanism for volunteer monitors to submit data to the DEP.

(***NJDEP AND WATERSHED WATCH NETWORK*** *continued on page 12)*

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